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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,528	12/20/2005	Hiroshi Taniuchi	01272.020678.	9818

5514 7590 08/21/2008
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EXAMINER

LEGESSE, HENOK D

ART UNIT	PAPER NUMBER
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2861

MAIL DATE	DELIVERY MODE
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08/21/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/561,528	Applicant(s) TANIUCHI ET AL.	
	Examiner HENOK LEGESSE	Art Unit 2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-44 is/are pending in the application.
- 4a) Of the above claim(s) 28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-27, 29-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 26- 27,29-32,34, and 36-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara et al. (US 2003/0068571) in view of Sansone et al. (US 4,673,303).

Regarding claim 26, Uehara et al teaches an image forming method (figs.3-8) comprising the steps of:

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performing hydrophilic treatment (using element 18 in figs.3-6,8) for making a surface of an intermediate transfer body (16 figs.3-6,8) hydrophilic by applying energy to the surface of the intermediate transfer body (16);

applying a material (using element 20 to coat layer 8 on the surface of 16) for reducing the fluidity of ink (32) on the intermediate transfer body (16) having the surface on which the hydrophilic treatment has been performed;

forming an image by ejecting the ink (32) from an ink jet head (28) on the intermediate transfer body (16) on which the liquid has been applied; and

transferring (using transfer and fixing device portion 46) the image formed on the intermediate transfer body (16) onto to a recording medium (34).

Uehara et al teaches different materials can be used by element 20 to form layer 8 on top of the intermediate transfer body 16 (see paragraphs 0052-0066). But, Uehara et al does not explicitly teach the material used is a liquid material.

However, from the same endeavor Sansone et al teaches image forming method including using fluid material (using element 138 in fig.5) for reducing the fluidity of ink on the intermediate transfer body (16) having the surface on which the hydrophilic treatment has been performed (col.8, lines 41-53, col.7 lines 19-30).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use liquid/fluid materials for reducing the fluidity of ink on the intermediate transfer body of Uehara et al based on the teachings of Sansone et al in order to provide various liquid materials that requires the use of less

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energy during transfer and fixing steps as compared to non liquid materials which need more energy for instance to melt or melt and evaporate during transfer and fixing steps.

Regarding claim 29, Uehara et al as modified by Sansone et al above further teaches wherein the hydrophilic treatment comprises plasma processing (plasma processor element 18 in figs.3-6,8. see paragraph 0203 line 2 and the text related to fig.3 of Uehara et al).

Regarding claim 30, Uehara et al as modified by Sansone et al above further teaches wherein the hydrophilic treatment is additionally performed (the hydrophilic treatment of the intermediate transfer body 16 of Uehara et al is additionally performed in the printing processes using device in fig.3 and it is also obvious to arrange plurality of element 18 in the device of fig.3 in order to get the required level of hydrophilic property).

Regarding claim 34, Uehara et al as modified by Sansone et al above further teaches a step of promoting a removal of water (36,50 in figs.3,5,6,8 of Uehara et al) from the ink on the intermediate transfer body (16 figs.3,5,6,8 of Uehara et al) prior to transferring the image to the recording medium (34).

Regarding claim 36, Uehara et al as modified by Sansone et al above further teaches an image forming method (figs.3-8 of Uehara et al) comprising the steps of:

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performing plasma processing (using plasma processor element 18 in figs.3-6,8. see paragraph 0203 line 2 and the text related to fig.3 of Uehara et al) on a surface of an intermediate transfer body (16 of Uehara et al), to make the surface hydrophilic (see fig. 3 and the related texts of Uehara et al);

applying a liquid (using element 20 figs.3,5,6,8 of Uehara et al as modified by element 138 fig.5 Sansone et al) for reacting with an ink on the intermediate transfer body (16 of Uehara et al) having the surface on which the plasma processing has been performed;

forming an image by ejecting the ink (32 of Uehara et al) from an ink jet head (28 of Uehara et al) on the intermediate transfer body (16 of Uehara et al) on which the liquid has been applied; and

transferring (using transfer and fixing device portion 46 of Uehara et al) the image formed on the intermediate transfer body (16 of Uehara et al) on to a recording medium (34 of Uehara et al).

Regarding claim 37, Uehara et al as modified by Sansone et al above further teaches an image forming method (figs.3-8 of Uehara et al) comprising the steps of:

performing plasma processing (using plasma processor element 18 in figs.3-6,8. see paragraph 0203 line 2 and the text related to fig.3 of Uehara et al) on a surface of an intermediate transfer body (16 of Uehara et al), the surface containing at least one of fluororubber and silicone rubber (paragraphs 0102 of Uehara et al), to make the surface hydrophilic (see fig. 3 and the related texts of Uehara et al);

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applying a liquid (using element 20 figs.3, 5, 6, 8 of Uehara et al as modified by element 138 fig.5 Sansone et al) for coagulating a colorant of ink on the intermediate transfer body (16 of Uehara et al) (see paragraphs 0059, 0064, 0070 of Uehara et al, and col.8, lines 41-53, col.2 lines 54-61 of Sansone et al) having the surface on which the plasma processing has been performed;

forming an image by ejecting the ink (32 of Uehara et al) from an ink jet head (28 of Uehara et al) on the intermediate transfer body (16 of Uehara et al) on which the liquid has been applied; and

transferring (using transfer and fixing device portion 46 of Uehara et al) the image formed on the intermediate transfer body (16 of Uehara et al) on to a recording medium (34 of Uehara et al).

Regarding claim 38, Uehara et al as modified by Sansone et al above further teaches an image forming method (figs.3-8 of Uehara et al) comprising the steps of:

applying a liquid (using element 20 figs.3, 5, 6, 8 of Uehara et al as modified by element 138 fig.5 Sansone et al) for reducing the fluidity of ink on an intermediate transfer body (16 of Uehara et al) on which hydrophilic treatment of applying energy to the intermediate transfer (using element 18 in figs.3-6, 8 of Uehara et al. See also col.8 lines 41-53, col.7 lines 19-30 Sansone et al) to make the intermediate transfer body (16 of Uehara et al) hydrophilic has been performed;

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forming an image by ejecting the ink (32 of Uehara et al) from an ink jet head (28 of Uehara et al) on the intermediate transfer body (16 of Uehara et al) on which the liquid has been applied; and

transferring (using transfer and fixing device portion 46 of Uehara et al) the image formed on the intermediate transfer body (16 of Uehara et al) on to a recording medium (34 of Uehara et al).

Regarding claim 39, Uehara et al as modified by Sansone et al above further teaches an image forming method (figs.3-8 of Uehara et al) comprising the steps of:

applying a liquid (using element 20 figs.3, 5, 6, 8 of Uehara et al as modified by element 138 fig.5 Sansone et al) for reacting with an ink on an intermediate transfer body (16 of Uehara et al) on which hydrophilic treatment by plasma processing has been performed (using element 18 in figs.3-6, 8 of Uehara et al. See also col.8 lines 41-53, col.7 lines 19-30 Sansone et al);

forming an image by ejecting the ink (32 of Uehara et al) from an ink jet head (28 of Uehara et al) on the intermediate transfer body (16 of Uehara et al) on which the liquid has been applied; and

transferring (using transfer and fixing device portion 46 of Uehara et al) the image formed on the intermediate transfer body (16 of Uehara et al) on to a recording medium (34 of Uehara et al).

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Regarding claim 41, Uehara et al as modified by Sansone et al above further teaches an image forming method (figs.3-8 of Uehara et al) comprising the steps of:

applying a liquid (using element 20 figs.3, 5, 6, 8 of Uehara et al as modified by element 138 fig.5 Sansone et al) for reacting with ink on an intermediate transfer body (16 of Uehara et al) on which hydrophilic treatment by application of energy (using element 18 in figs.3-6, 8 of Uehara et al. See also col.8 lines 41-53, col.7 lines 19-30 Sansone et al) to the intermediate transfer body (16 of Uehara et al) has been performed;

forming an image by ejecting the ink (32 of Uehara et al) from an ink jet head (28 of Uehara et al) on the intermediate transfer body (16 of Uehara et al) on which the liquid has been applied; and

transferring (using transfer and fixing device portion 46 of Uehara et al) the image formed on the intermediate transfer body (16 of Uehara et al) on to a recording medium (34 of Uehara et al).

Regarding claims 27 and 40, Uehara et al as modified by Sansone et al above further teaches wherein the surface of the intermediate transfer body (16 figs.3,5,6,8 of Uehara et al) contains at least one of a fluorine compound and a silicone compound (one of fluororubber and silicone rubber) (see paragraph 0102 of Uehara et al).

Regarding claims 31,32 and 44, Uehara et al as modified by Sansone et al above further teaches wherein the liquid contains a component for coagulating a

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colorant of the ink, wherein the component comprises metal ions (see paragraphs 0059, 0064, 0070, 0136, 0137, 0154 of Uehara et al, and col.8, lines 41-53, col.2 lines 54-61 of Sansone et al).

Regarding claim 42, Uehara et al as modified by Sansone et al above further teaches wherein the intermediate transfer body has a non-ink absorbing surface (the intermediate transfer body 16 of Uehara et al and Sansone et al has a non-ink absorbing surfaces, the ink image is absorbed by the surface of the recording medium).

Regarding claim 43, Uehara et al as modified by Sansone et al above further teaches wherein the intermediate transfer body (16 of Uehara et al and Sansone et al) has a surface with releasability (surface of 16 of Uehara et al and Sansone et al have releasability in order to easily release the ink image during image transfer step).

4. Claims 33 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara et al as modified by Sansone et al above and further in view of Komatsu et al. (US 6,059,407).

Regarding claim 33, Uehara et al as modified by Sansone et al above teaches substantially all the claimed invention (see the rejections above) except for an image forming method further comprising a step of applying a wettability improving liquid for

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improving a wettability of the surface of the intermediate transfer body prior to applying the liquid.

However, from the same endeavor Komatsu et al teaches an image forming method further comprising a step of applying a wettability improving liquid (surfactant 41 in figs.1-6) for improving a wettability of the surface of the intermediate transfer body (1).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include wettability improving liquid, surfactant, application device of Komatsu et al in the device of Uehara et al as modified by Sansone et al in order to improve the image transferability from the intermediate transfer body to the recording medium thereby improving print quality.

Regarding claim 35, Komatsu et al further teaches a step of cleaning (using 52 in fig.4) the surface of the intermediate transfer body (1).

Pertinent Prior Arts

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure;

Jeanmaire et al. (US 6,109,746) teaches liquid application for reducing the fluidity of ink on transfer body prior to image printing (element 220 in fig.3);

Arai et al. (US 5,470,691) teaches plasma treatment, hydrophilic surface (col.11, line 58 – col.12 line 3).

Response to Arguments

6. Applicant's arguments with respect to claims 26-44 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENOK LEGESSE whose telephone number is (571)270-1615. The examiner can normally be reached on Mon.- Fri. Between. 8:00 AM-6:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MATTHEW LUU can be reached on (571)272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LUU MATTHEW/
Supervisory Patent Examiner, Art Unit 2861
H.L.

08/14/2008